

AMENDMENTS TO THE CLAIMS

1. (currently amended) A RAID-5 configured storage system comprising:
 - a RAID controller,
 - a non-volatile random access memory (NVRAM) serving as a RAID cache memory,
 - a plurality of physical disks; and
 - at least one logical disk;wherein said storage system is operative to:
 - (1) read data from said logical disk;
 - (2) write data to said logical disk, wherein the writing process comprises
 - (i) reading an old data block and an old parity block from said logical disk or said RAID cache;
 - (ii) forming a new parity block and a new data block by computing an XOR with the new data and the old data block and the old parity block;
 - (iii) updating the logical disk by placing the new data block and the new parity block in the RAID cache or the logical disk, wherein the step of updating the logical disk comprises:
 - (a) finding a buffer of a physical disk number and a physical block number in the RAID cache memory by a search algorithm;
 - (b) allocating in the RAID cache memory a buffer area in the case when the physical disk number and the physical block number cannot be found; and
 - (c) writing data to the allocated buffer area and setting the allocated buffer area as a dirty buffer in the RAID cache memory.;
 - (3) flush data from said RAID cache memory to said logical disk at predetermined events; and

(4) otherwise perform read/write operations under the control of the RAID controller to the RAID cache memory.

2. (cancelled)

3. (cancelled)

4. (original) The system of Claim 1 wherein the reading process comprises:
determining whether an old data block to be read is already stored in the RAID cache memory, and if so, reading said old data block from said RAID cache memory; and
if said old data block is not stored in the RAID cache memory, allocating a read buffer area from said RAID cache memory and transferring said old data block from said logical disk to said read buffer area and reading said old data block from the RAID cache memory.

5. (original) The system of Claim 4 wherein said read buffer area is a non-dirty and least used block within the RAID cache memory.

6. (original) The system of Claim 1 where flushing the cache memory comprises:
selecting the dirty buffers in the cache memory;
writing the dirty buffers to the logical disk; and
setting the dirty buffers as a clean buffer in the RAID cache memory.

7. (currently amended) The system of Claim 31 wherein the allocating a buffer process comprises:
 - flushing RAID cache memory to the logical disk if no clean buffer is found in the RAID cache memory; and
 - selecting athe least used buffer in the RAID cache memory for allocation.
8. (original) The system of Claim 1 wherein during start up of said system after power loss, the system performs:
 - mapping the entire NVRAM to said logical disk;
 - checking whether a dirty flag for said NVRAM is on or off; and
 - flushing all of the dirty blocks of said NVRAM to said logical disk and resetting the dirty flag to off.
9. (original) The system of Claim 1 wherein during a shut down process:
 - all dirty blocks of said NVRAM is flushed to said logical disk; and
 - setting off a dirty flag of said NVRAM.